

CLAIMS

1. An optical pickup device for causing an optical beam to be converged into a recording layer of a recording medium having a plurality of recording layers and
5 receiving reflected light from the recording layer for recording and/or reading comprising:

a light source for emitting a light beam;

a beam expander having a converging lens for converging a light beam, a light-shielding panel having a
10 through-portion arranged at an optical conjugate position of an emission point of the light beam for allowing the light beam converged by the light-converging lens to pass through and a collimator lens for collimating the light beam passed through the through-portion;

15 an objective lens for focusing the light beam collimated by the beam expander to the recording layer; and

a light detector for detecting the light beam reflected by the recording medium and passed through the
20 objective lens and the beam expander to generate an error signal for controlling the focusing position and a reading data signal.

2. The optical pickup device according to Claim 1, wherein the beam expander includes a driver for driving
25 the collimator lens in the direction of an optical axis of the light beam for correcting an aberration of the light beam focused to the recording layer.

3. The optical pickup device according to Claim 1, wherein the through-portion has a size that can shield reflected light from a recording layer other than the recording layer to which the light beam is focused.

5 4. The optical pickup device according to Claim 1, wherein the light source includes an optical element for generating a main beam and a sub beam, and the light-shielding panel includes through-portions arranged at optical conjugate positions of the main beam and the sub
10 beam corresponding to the main beam and the sub beam.

5. The optical pickup device according to Claim 4, wherein the through-portion corresponding to the sub-beam has a diameter larger than the through-portion corresponding to the main beam.

15 6. The optical pickup device according to Claim 1, comprising a hologram element arranged on an optical path between the light source and the converging lens for introducing the reflected light beam passed through the beam expander to the light detector.

20 7. An optical pickup device for causing a light beam to be converged into a recording layer of a recording medium having a plurality of recording layers and receiving reflected light from the recording layer for recording and/or reading comprising:

25 a beam splitter for splitting an forward optical path from a light source to a recording medium and a backward optical path from a recording medium to a light

detector; and

a beam expander for correcting aberration of the light beam focused onto the recording layer,

the beam expander including a converging lens for
5 converging the light beam, a light-shielding panel having
a through-portion located at an optical conjugate point of
an emission point of the light beam on a common optical
path for the forward light path and the backward light
path, and a collimator lens for collimating the light beam
10 which is passed through the through-portion.

8. The optical pickup device according to Claim 7,
wherein the light-shielding panel allows the reflected
light from the recording layer to which the light beam is
focused to pass through and shields the reflected light
15 from the defocused recording layer.